



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, DC 20590  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10.031.054	04/26/2002	Erling Hansen	4020-012139	8708

7590 03/07/2003

Barbara E. Johnson  
700 Koppers Building  
436 Seventh Avenue  
Pittsburgh, PA 15219-1818

EXAMINER

WYROZEBSKI LEE, KATARZYNA I

ART UNIT	PAPER NUMBER
----------	--------------

1714

DATE MAILED: 03/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-9

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/031,054		HANSEN ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Katarzyna Wyrozebski Lee		1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 16-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some    \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) ____    |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8</u> | 6) <input type="checkbox"/> Other:  |

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 20, 26, 32, 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 20, 26, 32 and 39 are rendered as indefinite claims since it contains an improper Markush language. According to MPEP 2173.05(h) the Markush language may recite for example: "...wherein R is selected from the group consisting of A, B, C and D" or "...wherein R is A, B, C or D".

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1714

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 16-19, 22-26, 28-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hummerich (US 6,071,994).

The prior art of Hummerich discloses binder composition for glass fibers (col. 9, lines 42-44), which can be utilized as insulation (col. 10, lines 29-31).

The binder of the prior art of Hummerich comprises in two of the preferred embodiments maleic and anhydride, 1,2,3,6-tetrahydrophthalic anhydride that can also be utilized in mixtures (col. 2, lines 42-46). Monomer b can be zero as indicated in col. 3, line 64.

If the binder obtained in Hummerich is polymerized in aqueous solution, it is polymerizes in presence of a base such as amines (col. 7, lines 20-40), which include diethanolamine as one of the preferred embodiments.

The binder of Hummerich also utilized alkanolmine crosslinking agents, and phosphorus containing accelerators. The accelerator includes polyphosphoric acid, phosphoric acid, alkyl phosphinic acid and their salts (col. 8, lines 60-67).

The additives of the prior art of Hummerich include emulsifiers (col. 7, lines 1-4) and protective colloids. Protective colloids include polyvinyl alcohol, starch and its derivatives and polyglycols (col. 7, lines 5-15). Other additives include dyes, pigments, plasticizers, thickeners, adhesion promoters and trans-esterification catalysts (col. 9, lines 5-13). Further col. 9, lines 37-40 disclose use of silicates, silicones, lubricants and wetting agents. Further col. 10, lines 46-53 disclose auxiliary additives of silicone oils, alkoxysilanes such as 3-aminopropyltriethoxysilane and dust proofing agents.

In the process the binder and curing agent are applied to the fiber by spraying and cured upon heating to a temperature of 150-350°C (col. 10, lines 32-42).

According to the examples, the reaction between the monomers and amine is in a range of 2.3-3.7 (Table 1, col. 11). Although the examples do not disclose use of two anhydrides, it would have been obvious to utilize the same conditions since the examples also utilize alkanolamine base and since anhydrides are equally preferred embodiment.

Binder system wherein the polymer is polymerized from anhydrides in presence of alkanolamine can be efficiently utilized in the formation of insulation, wherein insulation comprises glass fibers.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize the prior art of Hummerich when utilizing anhydrides in the polymeric component polymerized *via* aqueous solution polymerization and thereby obtain the present invention. The prior art of Hummerich already discloses possibility of utilizing mixtures of anhydrides with an amine in order to form a binder for glass fibers.

7. Claims 17-21 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hummerich (US 6,071,994) as applied to claims 16-19, 22-26, 28-43 above, and further in view of Van Benthem (US 6,392,006).

The discussion of the disclosure of the prior art of Hummerich from paragraph 6 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of the prior art of Hummerich is the recitation of other types of anhydrides, which can be equally polymerized in presence of alkanolamine and be utilized with glass fibers.

With respect to the above difference, the prior art of Van Benthem discloses polycondensation polymer of anhydride in presence of alkanolamine, which polymer can be utilized as film forming component for glass fiber compositions (col. 9, lines 53-54).

The anhydrides disclosed in the prior art of Van Benthem include phthalic anhydride (example 1), hexahydrophthalic anhydride (example 2), trimellitic anhydride (col. 13, line 48). Specification further enables one of ordinary skill in the art to utilize tetrahydrophthalic

Art Unit: 1714

anhydride, maleic anhydride, methyltetrahydrophthalic anhydride, methylphthalic anhydride and the like.

The anhydrides listed above can be equally well utilized in formation of the binder, since they all contain the same functionality, which is the anhydride functionality. Therefore they are all functional equivalents in any concentration. All these anhydrides would therefore provide a binder, which can be as disclosed above in the prior art of Van Benthem utilized with glass fibers.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention, to utilize the anhydrides of Van Benthem in the binder of Hummerich and thereby obtain the claimed invention. The anhydrides of Van Benthem would still provide the binder that would be effective in binding glass fiber, since such use is suggested in Van Benthem.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski Lee whose telephone number is (703) 306-5875. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Application/Control Number: 10/031,054

Page 7

Art Unit: 1714

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*Katarzyna Rymaszewska*

KIWL

March 5, 2003